

Amendments to the claims:

1. (Currently Amended) A plate system for immobilizing adjacent vertebral bodies or stabilizing an interbody device, comprising:

a plate having at least one opening therein, said at least one opening having an upper section with a pre-selected width w_1 for receiving the head section of a bone screw and a lower section having a width less than w_1 and defining at least a partial helical track through which the threaded end of the screw may be threaded; and

a bone screw having a cylindrical head section of diameter d_1 , an intermediate neck section of a diameter d_2 and a depending threaded section of a diameter d_3 , the threaded section having a pitch matching the pitch of the at least the partial helical track in the plate, where $d_3 < d_1$, the threaded section of the screw being arranged so that once the screw is threaded completely into the plate opening the screw may be rotated relative to the plate to thread the screw into the vertebral body without causing any axial movement between the screw and the plate and may be removed from the plate only by reversing its rotation into said at least partial helical thread.

2. (Original) The invention of claim 1 wherein said at least one opening comprises a plurality of openings and wherein the openings overlie the vertebral bodies to be immobilized.

3. (Original) The invention of claim 2 where $d_1 \approx w_1$ to substantially prevent the screw from pivoting relative to the plate when threaded completely into the plate opening.

4. (Original) The invention of claim 2 where $d_1 < w_1$ to allow the screw to pivot relative to the plate when threaded completely into the plate opening.

5. (Original) The invention of claim 3 wherein at least one of the plate openings is generally cylindrical with w_1 equal to the diameter of the upper section of the opening and the lower section defining a complete helical thread.

6. (Original) The invention of claim 4 wherein at least one of the plate openings is generally cylindrical with w_1 equal to the diameter of the upper section of the opening and the lower section defining a complete helical thread.

7. (Original) The invention of claim 3 wherein at least one of the plate openings is in the form of a rectangular slot terminating at least at one end in a semicircular portion containing the partially threaded section.

8. (Original) The invention of claim 4 wherein at least one of the plate openings is in the form of a rectangular slot terminating at least at one end in a semicircular portion containing the partially threaded section.

9. (Previously Presented) The invention of claim 3 wherein at least one of the plate openings is in the form of a rectangular slot containing at least one partially threaded section therein.

10. (Currently Amended) The invention of claim 4 wherein at least one of the plate openings is in the form of a rectangular slot containing at least one partially threaded section therein.

11. (Currently Amended) The invention of claim 5 ~~9~~ wherein the slot and screw are arranged so that the screw can traverse along the slot once threaded into the opening.

12. (Currently Amended) The invention of claim 6 10 wherein the slot and screw are arranged so that the screw can traverse along the slot once threaded into the opening.

13. (Previously Presented) The invention of claim 1 wherein the partial helical thread is defined by a ring removably insertable into the lower section of the opening.

14. (Original) The invention of claim 1 wherein the entry and exit portions of the at least partial helical thread are in the form of an upper and lower chamfer, respectively, and wherein the screw has upper and a lower chamfer portions joining the neck to the cylindrical head and to the depending threaded portions, respectively, and the upper chamfer portion of the opening and the screw being complementary and the lower chamfer portions of the opening and the screw being complementary.

15. (Original) The invention of claim 1 where the head section of the screw is movable along the neck of the screw so that it may axially compress the plate against an underlying vertebrae and rigidly fix its location.

16. (Previously Presented) The invention of claim 1 wherein said at least one opening in the plate includes a screw receiving ring forming the lower section thereof.

17. (Previously Presented) A cervical plate system for immobilizing adjacent vertebral bodies comprising:

a bone screw having a cylindrical head section of a first diameter d_1 , an intermediate cylindrical neck section of a second diameter d_2 , and a depending threaded section having a given pitch, the threads having an outside diameter of d_3 , where d_2 is less than d_1 or d_3 , the screw having an upper chamfer portion joining the

cylindrical head section to the neck section and a lower chamfer portion joining the neck section to the depending threaded section;

a plate having at least two spaced openings therein for overlying vertebral bodies to be immobilized, each opening having an upper portion for receiving the head section of the screw and a lower portion defining at least a partial helical thread having the same pitch as the screw thread with entry and exit portions which have chamfers complementary to the upper and lower chamfer portions of the screw, the threads on the screw being arranged to extend below the exit portion of the at least partial helical thread in the plate opening whereby once the screw is threaded completely into the plate opening the screw may be rotated relative to the plate in a direction to thread the screw into a vertebral body without causing axial movement between the screw and plate and may be removed from the plate only by reversing its rotation into said at least partial helical thread.

18. (Original) The invention of claim 17 wherein at least one of the openings is in the form of a slot with semicircular ends and an intermediate generally straight section, the chamfers and the at least partial helical thread being formed on one of the semicircular ends.

19. (Currently Amended) The invention of claim ~~18~~ 17 wherein at least one of the openings in the plate is generally cylindrical, the chamfers in the opening and at least the partial helical thread being formed by a ring inserted into the lower portion of the opening.

20. (Original) The invention of claim 19 wherein the upper portion of the plate opening has a diameter slightly greater than d_1 to substantially prevent any pivoting action of the screw within the opening once the screw has been completely inserted into the plate.

21. (Original) The invention of claim 19 wherein the upper portion of the plate opening has a diameter sufficiently less than d_1 to allow the screw to pivot within the opening once the screw has been completely inserted into the plate.

22. (Original) The invention of claim 19 where the head section of the screw is movable along the neck of the screw so that it may axially compress the plate, rigidly fixing its location.

23. (Currently Amended) A plate system for immobilizing adjacent vertebral bodies or stabilizing an interbody device comprising:

a bone screw having a cylindrical head section of a first diameter d_1 , an intermediate cylindrical neck section of a second diameter d_2 , and a depending threaded section having a given pitch, the threads having an outside diameter of d_3 , where d_2 is less than d_1 or d_3 ;

a plate having at least one opening therein for attachment to a vertebral body and overlying an adjacent vertebral body and/or interbody device to be immobilized, the opening having an upper section for receiving the head section of the screw and a lower section defining at least a partial helical thread having the same pitch as the screw thread of the depending threaded section with entry and exit portions, the threads on the screw being arranged to extend below the exit portion of the at least partial helical thread in the plate opening whereby once the screw is threaded

completely into the plate opening the screw may be rotated relative to the plate in a direction to thread the screw into a vertebral body without causing axial movement between the screw and plate and the screw may be removed from the plate only by reversing its rotation into said at least partial helical thread.

24. (Currently Amended) The invention of claim 23 wherein the at least partial helical thread comprises a complete helical thread ~~formed by a ring positioned within the bottom section of said at least one of the openings.~~

25. (Currently Amended) The invention of ~~claim~~ claim 24 wherein said at least one opening is in the form of a slot and the helical thread being formed by a ring positioned therein, ~~with~~ the slot being arranged to allow the ring and screw to move transversely along the slot.

26. (Currently Amended) The invention of claim 24 wherein said at least one opening is circular and the helical threading formed by a ring positioned therein, the lower section of said opening defining an anti-rotation cavity and the ring defining an anti-rotation tab which projects within the cavity to prevent the ring from rotating within the opening.

27. Canceled

28. Canceled

29. (Previously Presented) The invention of claim 23 wherein the upper section of the plate opening has a width of w_1 and $d_1 \cong w_1$ to substantially prevent the screw from pivoting relative to the plate when threaded completely into the plate opening.

30. (Previously Presented) The invention of claim 23 wherein $d_1 < w_1$ to allow the screw to pivot relative to the plate when completely threaded into the plate opening.